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ABSTRACT

During the past year the popularity of the World Wide Web has eclipsed that of gopher technology. As a way to keep up with the ever changing communications media of the Internet, the National Council on Measurement in Education (NCME) established a Web server as a means of disseminating information to its membership. This paper describes how the Web server was formulated, how the results of last year's telecommunications survey were integrated into the design of the server, and how to access the Web site. The server provides information about organization, easy access to NCME documents, and pointers to other measurement sites. A list of 10 books introducing the Internet is included. (Contains 14 figures and 3 references.) (Author/SLD)

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Ensnaring NCME Through the World Wide Web

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Paper presented at the Annual Meetings of the National Council on Measurement in Education, New York, NY, April 8-April 11, 1996.

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Abstract

During the past year the popularity of the World Wide Web has eclipsed that of Gopher technology. As a way to keep up with the ever-changing communications media of the Internet, NCME established a Web server as a means of disseminating information to our membership. This paper describes how the Web server was formulated, how the results of last year's telecommunication survey were integrated into the design of the server, and how to access the Web site. The server provides information about both the organization, easy access to NCME documents, and pointers to other measurement sites.

Ensnaring NCME Through the World Wide Web

The phrase "Power of the Web" sounds like marketing hype developed by an Internet provider. As a matter of fact, the World Wide Web ("the web"), a part of the Internet, has produced its own set of jargon which can be confusing to many. Moreover, the popular press seems enamoured with this new communications technology and its associated linguistic aberrations. For example, the weekly newsmagazine Newsweek has created a new column, Cyberscope, devoted to documenting unique developments on the Internet. It even includes a side-bar which examines new computer-related terminology ("cyberspeak").

But what relevance would such power have to me as an academic researcher? This paper is a quick tour of the web from the perspective of a measurement researcher. It is replete with Internet jargon, though an attempt is made to define terms within their context. The goal of the paper is to familiarize the reader with some of the resources which can facilitate a typical research undertaking.

I was updating references for a paper on computerized adaptive testing, and thought I'd try to search the World Wide Web ("the Web") to make my review of the research more complete. I started my efforts with a wide search on educational measurement using a popular search tool Inktomi in combination with a program devoted to viewing web offerings (a "browser"). Using the computerized search tool ("engine") is fairly straightforward. One simply types the keywords for the search and clicks on a "search button" embedded in the web page. Keywords of the newer search tools are not constrained to follow traditional taxonomies such as the ERIC Thesaurus, though using the more conventional terminology will often produce good results.

I began with a wide search as shown in Figure 1. In less than one second, Inktomi found 237,812 references. Of course the number of matches on the keywords was too great to examine them all. I subsequently restricted the search by adding the additional keywords "computerized adaptive testing". This reduced the number of hits to 368 references, a much more managable figure.

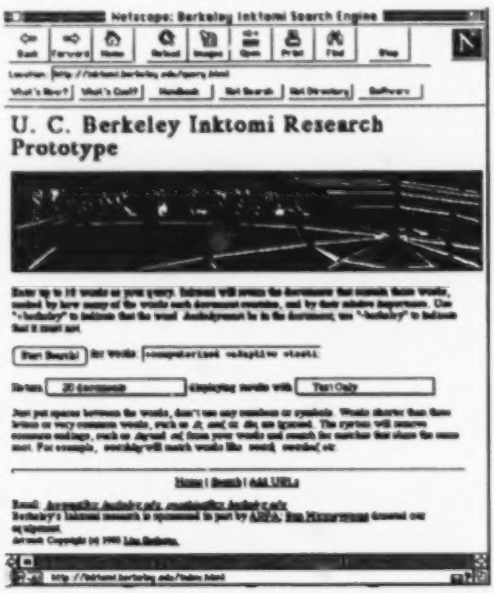

Figure 1. Search screen for Inktomi

One nice feature of the Inktomi search engine is that it rates the results of its matches ("hits") on a scale of 1000 with the higher scores associated with (what it believes to be) better hits. However this metacognitive narcissm is only as effective as the programming of the search engine and the researchers' keyword specifications. For example, in this particular search a few references were devoted benchmarking the performance of computers based on a series of tests

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administered by a manufacturer. This was clearly not what I had intended to retrieve, but was what was produced.

Figure 2 illustrates a partial listing of what I retrieved. These resources might be web documents, papers, articles, technical reports, and programs among other things. In order to retrieve the listed reference, you just have to "click" on it and your browsing program will transport you to the document's location.

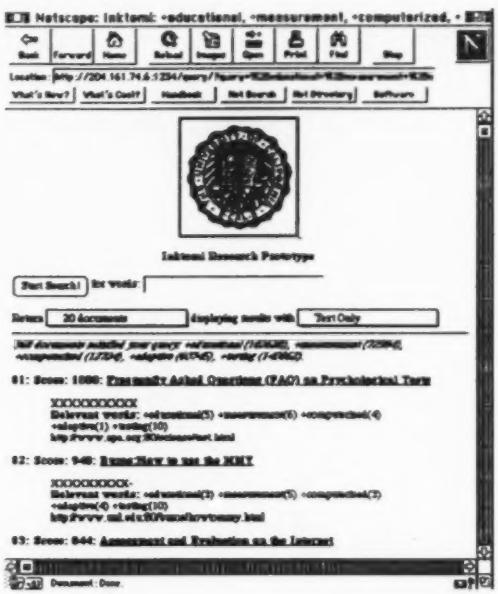

Figure 2. Inktomi search results

It turns out that there are a number of search engines available to use. Each one has advantages and disadvantages associated with it. Many search engines place a premium on speed while others are oriented towards comprehensiveness. If you want a listing of search engines, simply link to Inktomia (http://inktomi.berkeley.edu/) and do a search on "search engines".

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Are there other tools available to the measurement specialist for locating appropriate resources? The answer is a resounding "yes". What you'll find is that many locations are in fact linkages (or "pointers") to other locations. It is quite likely that no one site will produce the information that you seek, but you should be able to eventually find ("navigate" to) what you are looking for. In the examples listed for this paper we'll be navigating through the National Council on Measurement in Education's (NCME) Web server, but other Web sites would be just as useful. For example, ERIC's Evaluation and Assessment web site is probably the most comprehensive in terms of pointers to other information servers.

The NCME web site was based on a needs analysis conducted in October of 1994 (Shermis, 1995). It was created with many of the resources that the membership specified were important for the functioning of the organization, for facilitating research, and for help in teaching about measurement. In order to reach the NCME Web site, simply type in your browser's Universal Resource Locator's ("URL") field:

http://www.assessment.iupui.edu/NCME

The "http://" part of the URL means that the transmission protocol of the communication is based on hypertext (web) technology. The "www.assessment.iupui.edu" refers to a specific computer server. IUPUI is my home institution (It has the distinction of having the longest name [Indiana University-Purdue University Indianapolis] for any university in North America and you can see why we use the acronym). The "/NCME" takes the connection to a specific directory on the server which contains information about NCME. Figure 3 shows the NCME's initial web

directory screen ("homepage"). From the homepage, one can be routed to a number of different locations.

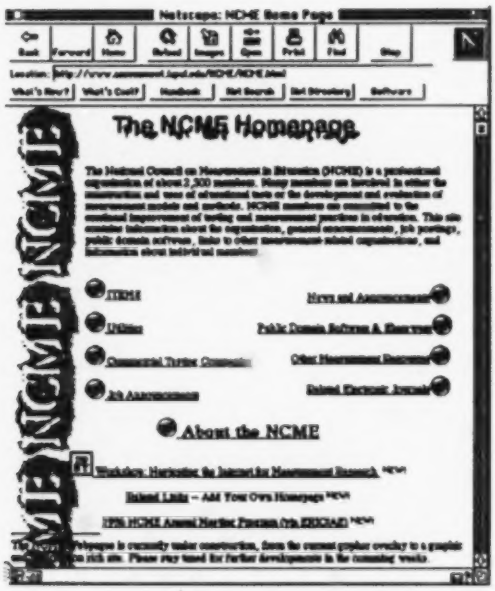

Figure 3. NCME homepage

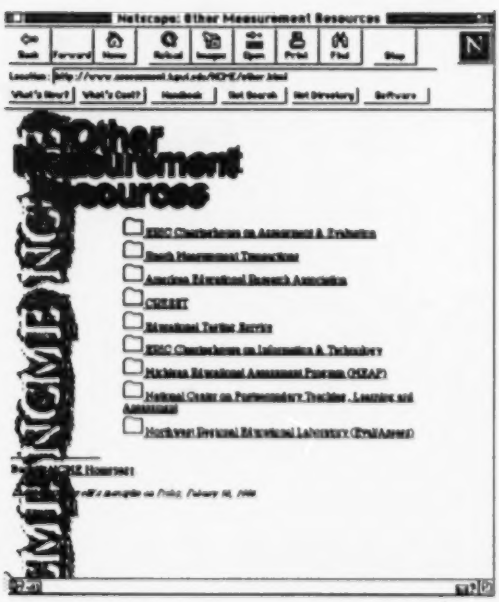

Figure 4. Some common measurement linkages

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The items on the NCME homepage lead to information resources that can facilitate measurement research. For example, one item on the homepage is a listing of some of the more popular measurement resource linkages. The current links are given in Figure 4.

One link is to ERIC/AE. The linkage shown in Figure 5 is to an item which lists additional assessment and evaluation resources. The one illustrated in Figure 5 was drawn from an article written by Liselle Drake and Lawrence Rudner. It is somewhat unique in that the resources described in the article can actually be accessed via hypertext.

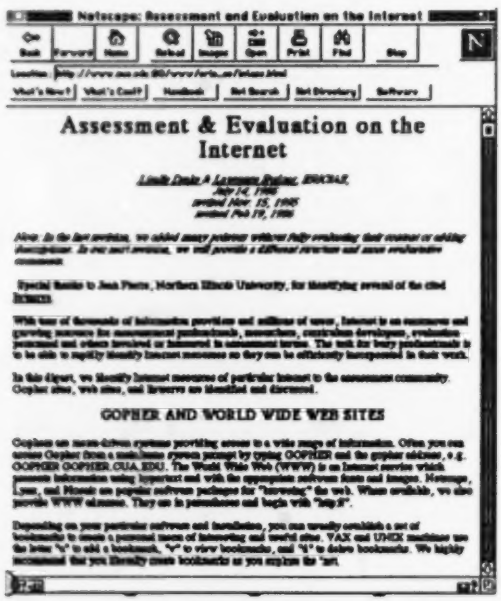

Figure 5. An article retrieved from ERIC/AE

An increasingly popular type of resource is comprised of electronic journals. Electronic journal dissemination can provide timely information and reduce the reporting time from the typical 18 months to about three months. This is especially important in research

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areas where clusters of investigators are working on the same or related topics.

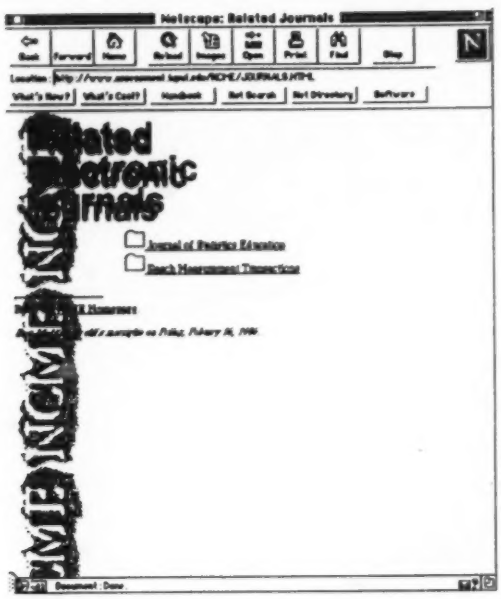

Figure 6. Linkages to electronic journals

Figure 7. Linkages to individuals or organizations.

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Occasionally your best resource can be another person. An NCME homepage option is to link to the homepage of another colleague or related organization. The NCME links option is one way to navigate to another individual or related organization. Figure 7 shows the NCME linkage option while Figure 8 illustrated the homepage of this author.

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Director of Testing
Associate Professor, Department of Psychology
Adjunct Associate Professor, School of Education
Licensed Psychologist, State of Indiana

Figure 8. The authors homepage.

Some measurement research (e.g., simulation studies) involves the use of running specialized software. This software might be retrieved either from NCME's public domain software (Figure 9) or through linkages to commercial vendors (Figure 10). Figure 11 shows one vendor's (Assessment Systems Corporation, Inc.) offerings for demonstration software.

Some of the information linked to the NCME homepage is related to the daily transactions of measurement professionals. One such

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transaction has to do with the searching for employment. Figure 12 shows a section of the web server devoted to job announcements.

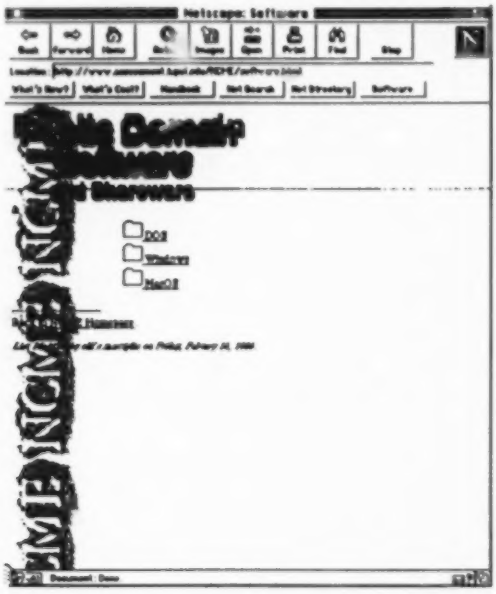

Figure 9. Public domain measurement software

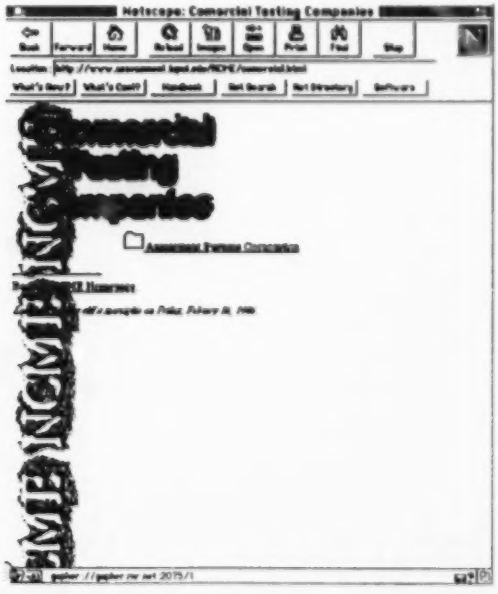

Figure 10 Linkages to commercial testing companies.

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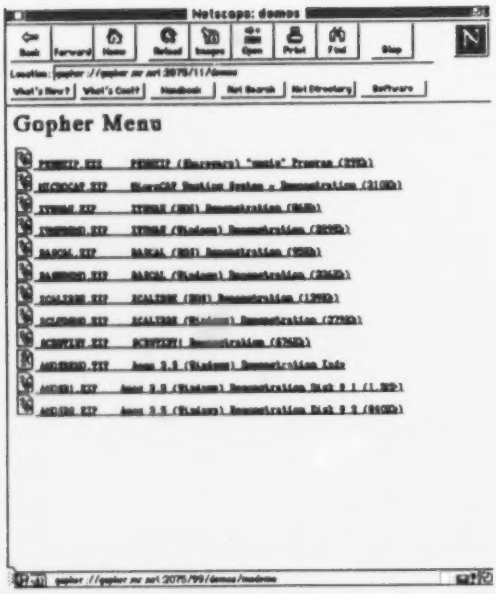

Figure 11. Assessment Systems Corporation, Inc.'s demonstration software.

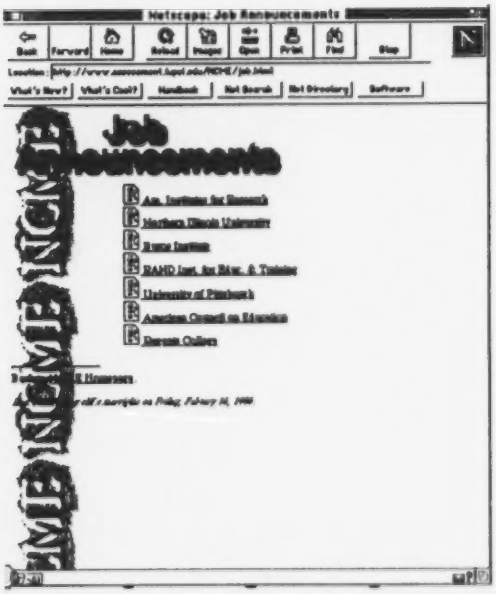

Figure 12. Job announcements

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Teaching is an important consideration in the formulation of the web site. The web server carries ITEMS modules which are designed to help faculty illustrate various measurement concepts. The modules can be incorporated as part of a class or workshop and are available at no charge. Figure 13 illustrates the ITEMS screen for the web site.

Finally, the web server carries documents of topical interest. Through ERIC/AE one can find out more about the program for the NCME Annual Meeting. Figure 14 shows ERIC/AE's program guide. One need only type in the relevant keywords and the document will locate authors or topics of interest.

This paper has been a short tour of the developments of the NCME web server. The server was designed based on a needs assessment conducted with the membership in the fall of 1994. Based on the results of this survey, the web server was planned to facilitate research, teaching, and some of the operational needs of the NCME membership. The server site is under continuous construction. If you have suggestions or ideas, contact one of the members of the Ad Hoc Committee on Electronic and Alternate Communications or contact the author at the address given in the Authors Notes.

Figure 13. Selection for the ITEMS modules

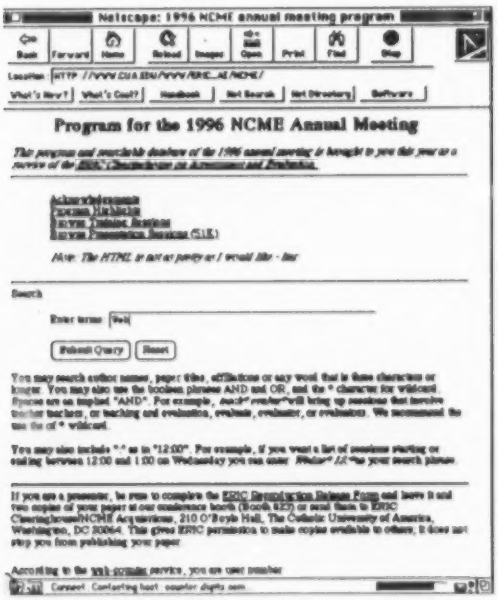

Figure 14. The ERIC/AE NCME Annual Meeting Guide (available on the NCME web server)

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Drake, L., & Rudner, L. (1996, February). Assessment and evaluation on the Internet. ERIC/AE:(http://www.cua.edu/www/eric_ae/).

Hawn, M. (1996). Top ten Internet books. MacWorld, 13(5), 56.

Shermis, M. D. (1995, April). NCME telecommunications survey: A needs assessment. Paper presented at the annual meetings of the National Council on Measurement in Education, San Francisco, CA.

Internet Books

The following books have been cited by MacWorld (May, 1996) as good starting points for exploring the Internet:

Getting Started

Kennedy, A. (1995). The Internet and the World Wide Web. Rough Guides (ISBN 1-85828-198-9).

Engst, A. C. (1995). Internet starter for Macintosh. Hayden Books (ISBN 1-56830-197-9).

Designing and Publishing

Lemay, L. (1995). Teach yourself web publishing with HTML in 14 days. Sams.net (ISBN 1-57521-014-2).

Fahey, M. J. (1995). Web publisher's design guide for Macintosh. The Coriolis Group (ISBN 1-883577-63-2).

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Wiederspan, J., & Shotton, C. (1996). Planning and managing web sites on the Macintosh. Addison Wesley (ISBN 0-201-47957-5).

Taylor, D. (1995). Macworld's creating cool web pages with HTML. IDG Books Worldwide (ISBN 1-56884-705-X).

Sterne, J. (1995). World Wide Web marketing. John Wiley & Sons (ISBN 0-471-128430).

Culture

Mandel, T., & Van Der Leun, G. (1996). Rules of the net. Hyperion (ISBN 0-7868-8135-6).

Various Editors (1995). Happy mutants handbook. Putnam Berkley (ISBN 1-57322-502-9).

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